FEB O 6 MICH WITH

Patent Application
Attorney Docket No.: 57941.000062
Client Reference No.: RA001.2003.1.C.US

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

:

Michael FARMWALD et al.

Group Art Unit: Unassigned

Appln. No.: 10/716,595

: Examiner: Unassigned

Filed: November 20, 2003

•

For: INTEGRATED CIRCUIT I/O USING

A HIGH PERFORMANCE BUS

INTERFACE

Commissioner for Patents

P.O. Box 1450 Alexandria, VA 22313-1450

### INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with the duty under 37 C.F.R. § 1.56 of each individual associated with the filing and prosecution of the above-identified patent application (hereinafter, "associated individuals") to disclose all information known to that individual to be material to patentability, Applicant(s) hereby submits attached Form PTO-1449 (modified) listing cited references. This submission is made in accordance with 37 C.F.R. §§ 1.97 and 1.98 and § 609 of the Manual of Patent Examining Procedure.

The cited references, while believed to be of some relevance, are not necessarily considered to teach or suggest any aspect of the invention described and claimed in the above-

Patent Application
Attorney Docket No.: 57941.000062
Client Reference No.: RA001.2003.1.C.US

identified patent application. Applicant(s) hereby expressly reserves the right to swear behind the effective dates of any of the cited references. Applicant(s) further reserves the right to question the relevance, materiality, and/or prior art status of any of the cited references in whole, in part, or in combination, subsequent to the filing of this information disclosure statement. This information disclosure statement is also not to be construed as a representation that a search has, or has not, been conducted or that no better art exists.

Rather, this information disclosure statement discloses only the best references of which the associated individuals are aware.

The Examiner is respectfully requested to consider each of the cited references, to indicate such consideration by initialing in the space provided next to each cited reference on the enclosed Form PTO-1449 (modified), to sign the initialed Form PTO-1449 (modified), and to return a copy of the same with the next communication to the Applicant(s).

Since copies of the cited references were previously submitted in prior U.S. Patent Application No. 09/801,151, copies of the cited references are not being submitted herewith. However, copies will be forwarded at the request of the Examiner.

Patent Application
Attorney Docket No.: 57941.000062
Client Reference No.: RA001.2003.1.C.US

In accordance with 37 CFR § 1.97(b), this information disclosure statement is being filed (i) within three months of the filing date of the above-identified patent application; (ii) within three months of the date upon which the above-identified patent application entered the national stage as set forth in 37 CFR § 1.491; or (iii) before the mailing date of a first Office Action on the merit for the above-identified patent application. Accordingly, no statement or fee is required.

Please charge any shortage in fees due in connection with the filing of this communication to Deposit Account No. 50-0206, and please credit any excess fees to such deposit account.

Respectfully submitted,

Hunton & Williams LLP

Thomas E. Anderson

Registration No. 37,063

TEA/sdw

Hunton & Williams LLP 1900 K Street, N.W.

Washington, D.C. 20006-1109

Telephone: (202) 955-1500 Facsimile: (202) 778-2201

Date: February 6, 2004

ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)
MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

U.S. PATENT DOCUMENTS

			U.B.T.T.T.D.				
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	1.	4,330,852	May 18, 1982	Redwine et al.			
	2.	4,703,418	Oct. 27, 1987	James			
	3.	4,726,021	Feb. 16, 1988	Horiguchi et al.			
	4.	4,785,394	Nov. 15, 1988	Fischer			
	5.	4,870,562	Sept. 26, 1989	Kimoto et al.			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO	
	6.	S56-82961	July 7, 1981	Japan			YES	
	7.	S57-14922	Jan. 26, 1982	Japan			YES	
	8.	Sho 60-80193	May 8, 1983	Japan			YES	
	9.	Sho 60-55459	Mar. 30, 1985	Japan			YES	
	10.	S61-72350	April 14, 1986	Japan			YES	
	11.	S63-142445	June 14, 1988	Japan	_		. YES	
	12.	B63-46864	Sept. 19, 1988	Japan	1		YES	
	13.	S64-29951	Jan. 31, 1989	Japan			YES	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	14.	Watanabe, T.; "Session XIX: High Density SRAMS"; IEEE International Solid State Circuits Conference pp. 266-267 (1987)
	15.	Ohno, C.; "Self-Timed RAM: STRAM"; Fujitsu Sci. TechJ., 24, 4, pp 293-300 (Dec. 1988)
	16.	"Fast Packet Bus for Microprocessor Systems with Caches", IBM Technical Disclosure Bulletin, pp.279-282 (Jan 1989)
:	17.	Gustavson, D. "Scalable Coherent Interface"; Invited Paper, COMPCON Spring '89, San Francisco, CA; IEEE, pp. 536-538 (Feb 27-Mar 3, 1989)
	18.	James, D.; "Scalable I/O Architecture for Busses"; IEEE, pp. 539-544 (April 1989)

EXAMINER	DATE CONSIDERED
----------	-----------------

ATTY. DOCKET NO. 57941.000062 SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE **STATEMENT** BY APPLICANT

FILING DATE November 20, 2003 **GROUP ART UNIT** Unassigned

ILS. PATENT DOCUMENTS

			U.S. I ATENI DO	7001/121/12			
EXAMINER INITIALS		DOCUMEN T NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	19.	4,845,670	Jul. 4, 1989	Nishimoto et al.			
	20.	4,509,142	Apr. 2, 1985	Childers			
	21.	4,685,088	Aug. 4, 1987	Ianucci			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
	22.	0 246 767	April 28, 1987	EPO			
	23.	0 334 552	Mar. 16, 1989	EPO			
	24.	0 276 871	Jan. 29, 1988	EPO			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

25.	European Search Report for EPO Patent Application No. 00 101 1832
26.	European Search Report for EPO Patent Application No. 89 30 2613
27.	Z. Amitai, "New System Architectures for DRAM Control and Error Correction", Monolithic Memories Inc., Electro/87 and Mini/Mico Northeast: Focusing on the OEM Conference Record, pp. 1132, 4/31-3, (April 1987)
28.	N. Siddique, "100-MHz DRAM Controller Sparks Multiprocessor Designs", Electronic Design, pp. 138-141, (Sept 1986)
29.	H. Kuriyama et al., "A 4-Mbit CMOS SRAM WITH 8-NS SERIAL ACCESS TIME", IEEE Symposium On VLSI Circuits Digest Of Technical Papers, pp. 51-52, (June 1990)
30.	A. Fielder et al., "A 3 NS 1K X 4 STATIC SELF-TIMED GaAs RAM", IEEE Gallium Arsenide Integrated Circuit Symposium Technical Digest, pp. 67-70, (Nov. 1988)
31.	JEDEC Standard No. 21C

EXAMINER	DATE CONSIDERED



PTO-1449 (Modified) RADEMARY

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

#### **U.S. PATENT DOCUMENTS**

			S. PATENT D	O COMIDITIE			
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	32.	4,649,511	03/10/97	Gdula			
	33.	4,860,198	08/22/89	Takenaka			
	34.	3,969,706	07/13/76	Proebsting et al.			
	35.	4,766,536	08/23/88	Wilson, Jr. et al.			
	36.	4,998,262	03/05/91	Wiggers			
	37.	4,757,473	07/12/88	Kurihara et al.			
	38.	4,792,926	12/20/88	Roberts			
	39.	4,811,202	03/07/89	Schabowski			
	40.	5,034,917	07/23/91	Bland et al.			
	41.	4,845,664	07/04/89	Aichelmann, Jr. et al.			
. Y.	42.	5,140,688	08/18/92	White et al.			
	43.	4,747,079	05/24/88	Yamaguchi			
	44.	5,301,278	04/05/94	Bowater et al.		-	
	45.	5,051,889	09/24/91	Fung et al.			
	46.	5,153,856	10/06/92	Takahashi			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	OTHER DOCOMENTO (including rights) Title; Date; Tel anent Tages; Etel;						
	47.	M. Horowitz et. al., "MIPS-X: A 20-MIPS Peak 32-bit Microprocessor with On-Chip Cache", IEEE					
l		Journal of Solid State Circuits, vol. 22 No. 5, pp. 790-799 (Oct. 1987)					
	48.	T.L. Jeremiah et. al., "SYNCHRONOUS LSSD PACKET SWITCHING MEMORY AND I/O					
		CHANNEL," IBM Tech. Disc. Bul,. Vol. 24, No. 10, pp. 4986-4987 (Mar. 1982)					
	49.	L. R. Metzeger, "A 16K CMOS PROM with Polysilicon Fusible Links", IEEE Journal of Solid State					
	İ	Circuits, vol. 18 No. 5, pp. 562-567 (Oct. 1983)					

EX	AM	INE	R

DATE CONSIDERED

OTPE SER O 6 2004

PTO-1449 (Modified)

DE ATTY. DOCKET NO. 57941.000062 SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

**U.S. PATENT DOCUMENTS** 

			DI LITABILIA D			·	
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	50.	4,445,204	04/24/84	Nishiguchi			
	51.	4,821,226	04/11/89	Christopher et al.			
<del>-</del> -	52.	4,882,712	11/21/89	Ohno et. al.			-
	53.	4,951,251	08/21/90	Yamaguchi et al.			
	54.	5,107,465	04/21/92	Fung et al.			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

OTHE	R DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)
55.	A. Yuen et. al., "A 32K ASIC Synchronous RAM Using a Two-Transistor Basic Cell", IEEE
	Journal of Solid State Circuits, vol. 24 No. 1, pp. 57-61 (Feb. 1989)
56.	D.T. Wong et. al., "An 11-ns 8Kx18 CMOS Static RAM with 0.5-µm Devices", IEEE Journal of
	Solid State Circuits, vol. 23 No. 5, pp. 1095-1103 (Oct. 1988)
57.	T. Williams et. al., "An Experimental 1-Mbit CMOS SRAM with Configurable Organization and
	Operation", IEEE Journal of Solid State Circuits, vol. 23 No. 5, pp. 1085-1094 (Oct. 1988)
58.	D. Jones, "Synchronous static ram", Electronics and Wireless World, vol.93, no.1622, pp. 1243-4
	(Dec. 87)
59.	F. Miller et. al., "HIGH FREQUENCY SYSTEM OPERATION USING SYNCHRONOUS
	SRAMS", Midcon/87 Conference Record, pp. 430-432 Chicago, IL, USA; 15-17 Sept. 1987
60.	K. Ohta, "A 1-Mbit DRAM with 33-MHz Serial I/O Ports", IEEE Journal of Solid State Circuits,
	vol. 21 No. 5, pp. 649-654 (Oct. 1986)
61.	K. Nogami et. al., "A 9-ns HIT-Delay 32-kbyte Cache Macro for High-Speed RISC", IEEE Journal
	of Solid State Circuits, vol. 25 No. 1, pp. 100-108 (Feb. 1990)
62.	F. Towler et. al., "A 128k 6.5ns Access/ 5ns Cycle CMOS ECL Static RAM", 1989 IEEE
1	international Solid State Circuits Conference, (Feb. 1989)
63.	M. Kimoto, "A 1.4ns/64kb RAM with 85ps/3680 Logic Gate Array", 1989 IEEE Custom Integrated
	Circuits Conference
64.	D. Wendell et. al. "A 3.5ns, 2Kx9 Self Timed SRAM", 1990 IEEE Symposium on VLSI Circuits
	(Feb 1990)
65.	E. H. Frank, "The SBUS: Sun's High Performance Bus for RISC Workstations", Sun Microsystems
	Inc. 1990
66.	H. L. Kalter et al. "A 50-ns 16Mb DRAM with a 10-ns Data Rate and On-Chip ECC" IEEE Journal
	of Solid State Circuits, vol. 25 No. 5, pp. 1118-1128 (Oct 1990)
67.	J. Chun et al. "A pipelined 650MHz GaAs 8K ROM with Translation Logic" GaAs IC Symposium
	1990

EXAMINER	DATE CONSIDERED

FEB O 6 2004 E

PTO-1449 (Modified TRADEMARI

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

**U.S. PATENT DOCUMENTS** 

			S. PATENT DOC	OWIEWIS			T
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	68.	5,206,833	04/27/93	Lee			
	69.	4,953,128	08/28/90	Kawai et al.			
	70.	4,970,418	11/13/90	Masterson			
	71.	4,916,670	04/10/90	Suzuki et al.			
	72.	4,570,220	02/11/86	Tetrick et al.			
	73.	4,099,231	07/01/78	Kotok et al.			
	74.	5,301,278	04/05/94	Bowater et al.			
	75.	5,140,688	08/18/92	White et al.			
	76.	5,018,111	05/21/91	Madland			
	77.	4,734,880	03/29/88	Collins			
	78.	4,183,095	01/08/80	Ward			
	79.	4,975,872	12/04/90	Zaiki			
	80.	5,016,226	05/14/91	Hiwada et al.			
	81.	5,210,715	05/11/93	Houston			
	82.	4,928,265	05/22/90	Higuchi et al.			
	83.	4,953,130	08/28/90	Houston			
	84.	5,251,309	10/05/93	Kinoshita et al.			
	85.	4,630,193	Dec. 16, 1986	Kris			
	86.	4,710,904	Dec. 1, 1987	Suzuki			
	87.	4,739,502	Apr. 19, 1988	Nozaki			

EX	A 1	. <i>A</i> T	NI	ED.
г.х	AI	vii	IV	rк

DATE CONSIDERED

PTO-1449 (Modified)

ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)
MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

U.S. PATENT DOCUMENTS

U.S. PATENT DOCUMENTS										
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE			
	88.	4,205,373	May 27, 1980	Shah et al.						
	89.	4,905,201	Feb. 27, 1990	Ohira et al.						
	90.	3,691,534	09/12/72	Veradi, et. al						
	91.	3,771,145	11/06/73	Wiener						
	92.	4,536,795	08/20/85	Hirota, et. al						
	93.	4,629,909	12/16/86	Cameron						
	94.	4,631,659	12/23/86	Hayne, et. al						
	95.	4,858,113	08/15/89	Saccardi						
	96.	4,499,536	02/12/85	Gemma et al.						
,	97.	4,648,102	03/03/87	Riso, et. al						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
	98.	EP 0424774	05/02/91	EPO			
	99.	EP 0449052	03/29/90	ЕРО			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

100.	European Search Report for EPO Patent Application No. 00 10 0018
101.	European Search Report for EPO Patent Application No. 00 10 822
102.	Takasugi, A. et al., "A Data-Transfer Architecture for Fast Multi-Bit Serial Acess Mode DRAM," 11 <sup>th</sup> European Solid State Circuits Conference, Toulouse, France pp.161-165 (Sep. 1985)
103.	Amitai, Z., "Burst Mode Memories Improve Cache Design," WESCON/90 Conference Record, pp. 29-32 (Nov. 1990)

EXAMINER	DATE CONSIDERED

FEB 0 6 2004 14

PTO-1449 (Modified)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

U.S. PATENT DOCUMENTS

			.S. IAIENI D	OCCUIDITIO		,	
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	104.	4,663,735	05/05/87	Novak, et. al			
	105.	4,825,287	04/25/89	Baji, et. al			
	106.	4,845,677	07/04/89	Chappell, et. al			
	107.	4,873,671	10/10/89	Kowshik, et. al			
	108.	4,876,670	10/24/89	Nakabayashi, et. al			
	109.	4,901,036	02/13/90	Herold, et. al			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLAT YES/NC	-
	110.	EP 0218523	05/30/89	EPO				
	111.	JP-A-1- 236494	09/21/89	JP		·	YES	
	112.	Sho 62-71428	03/27/87	JP			YES	
	113.	EP 0282735	09/21/88	EPO				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) Horowitz et al., "MIPS-X: A 20-MIPS Peak 32-Bit Microprocessor with ON-Chip Cache", IEEE J. 114. Solid State Circuits, vol. SC-22, No. 5, pp. 790-798 (Oct. 1987) Robert J. Lodi et al., "Chip and System Characteristics of a 2048-Bit MNOS-BORAM LSI 115. Circuit," 1976 IEEE International Solid-State Circuits Conference (Feb. 18, 1976) 116. 1989 GaAs IC Data Book & Designers Guide, Gigabit Logic Inc. (Aug 1989) 117. "IC's for Entertainment Electronics, Picture in Picture System Edition 8.89", Siemens AG, 2/89 Fagan, J.L., "A 16-kbit Nonvolatile Charge Addressed Memory," IEEE Journal of Solid-State 118. Circuits, Vol. SC-11, No. 5, pp. 631-636 (Oct. 1976) Ikeda, Hiroaki et al., "100 MHz Serial Acess Architecture for 4Md Field Memory," Symposium of 119. VLSI Circuits, Digest of Technical Papers, pp. 11-12 (Jun. 1990) Schmitt-Landsiedel, Doris, "Pipeline Architecture for Fast CMOS Buffer RAMs," IEEE Journal of 120. Solid-State Circuits, Vol. 25, No. 3, pp. 741-747 (Jun. 1990)

FX	A	М	INI	FR

DATE CONSIDERED

PTO-1449 (Modified) CRADENA

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

U.S. PATENT DOCUMENTS

			U.S. FATE	11 DOCUMENTS		_	
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	121.	4,979,145	12/18/90	Remington, et. al			,
	122.	5,099,481	04/24/92	Miller			
	123.	5,016,226	05/14/91	Hiwada, et. al			
	124.	5,023,835	06/11/91	Akimoto, et. al		•	
	125.	5,036,495	07/30/91	Busch, et. al			
	126.	5,111,486	05/05/92	Oliboni, et. al			
	127.	5,123,100	06/16/92	Hisada, et. al		_	
	128.	5,276,846	01/04/94	Aichelmann Jr., et. al			
	129.	5,361,277	11/01/94	Grover			
	130.	5,684,753	11/04/97	Hashimoto, et al			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO	
	131.	WO 89/12936	12/28/89	PCT				
•	132.	JP 62-51509	03/06/87	Japan			YES	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	133.	Svensson, Christer, "High Speed CMOS Chip to Chip Communications Circuit," IEEE International
		Symposium on Circuits and Systems, pp. 2228-2231 (Jun. 1991)
	134.	Wakayama, Myles, "A 30-MHz Low-Jitter High-Linearity CMOS Voltage-Controlled Oscillator,"
	<u> </u>	IEEE Journal of Solid-State Circuits, Vol. SC-22, No. 6, pp. 1074-1081 (Dec. 1987)
	135.	Whiteside, Frank, "A Dual-Port 65ns 64Kx4 DRAM with a 50MHz Serial Output," IEEE
1		International Solid-State Circuits Conference Digest (Feb. 1986)
	136.	Wu, Jich-Tsorng, "A 100-MHz Pipelined CMOS Comparator," IEEE Journal of Solid-State Circuits,
		Vol. 23, No. 6, pp. 1379-1385 (Dec. 1988)
	137.	Lineback, J. Robert, "System Snags Shouldn't Slow the Boom in Fast Static RAMs," Electronics, pp.
		60-62 (July 23, 1997)

EXA	M	IN	FR

DATE CONSIDERED

9 of 16

FEB 0 6 2004

PTO-1449 (Modified)

ATTY. DOCKET NO. 57941.000062 SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE **STATEMENT** BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) 138. Graham, Andy and Stewart Sando, "Pipelined Static RAM Endows Cache Memories with 1-ns Speed," Electronic Design, pp. 157-170 (Dec. 1984) Pinkham, Raymond, "A High Speed Dual Port Memory with Simultaneous Serial and Random 139. Mode Access for Video Applications," IEEE Journal of Solid-State Circuits, Vol. SC-19, No. 6, pp. 999-1007 (Dec. 1984) 140. Ishimoto, S. et al., "A 256K Dual Port Memory," ISSCC Digest of Technical Papers, p. 38-39 (Feb. 1985) Iqbal, Mohammad Shakaib, "Internally Timed RAMs Build Fast Writable Control Stores," 141. Electronic Design, pp. 93-96 (August 25, 1988) Schnaitter, William M. et al., "A 0.5-GHz CMOS Digital RF Memory Chip," IEEE Journal of 142. Solid-State Circuits, vol. SC-21, no. 5, pp. 720-726 (Oct. 1986) Bursky, Dave, "Advanced Self-Timed SRAM Pares Access Time to 5 ns," Electronic Design, pp. 143. 145-147 (Feb. 22, 1990) Tomoji Takada et al., "A Video Codec LSI for High-Definition TV Systems with One-Transistor 144. DRAM Line Memories," IEEE Journal of Solid-State Circuits, Vol. 24, No. 6, pp. 1656-1659 145. Robert J. Lodi et al., "MNOS-BORAM Memory Characteristics," IEEE Journal of Solid-State Circuits, vol. SC-11, No. 5, pp. 622-631 (Oct. 1976) 146. Gregory Uvieghara et al., "An On-Chip Smart Memory for a Data-Flow CPU," IEEE Journal of Solid-State Circuits, vol. 25, No. 1, pp. 84-89 (Feb. 1990) Ray Pinkham et al., "A 128Kx8 70-MHz Multiport Video RAM with Auto Register Reload and 147. 8x4 WRITE Feature," IEEE Journal of Solid State Circuits, vol. 23, no. 3, pp. 1133-1139 (Oct. 148. Graham, Andy and Stewart Sando, "Pipelined Static RAM Endows Cache Memories with 1-ns Speed," Electronic Design pp. 157-170 149. Hans-Jurgen Mattausch et al., "A Memory-Based High-Speed Digital Delay Line with a Large Adjustable Length," IEEE Journal of Solid-State Circuits, vol. 23, no. 1, pp. 105-110 (Feb. 1988) Kanopoulos, Nick and Jill H. Hallenbeck, "A First-In, First-Out Memory for Signal Processing 150. Applications," IEEE Transactions on Circuits and Systems, Vol. CAS-33, No. 5, pp. 556-558 (May 1986)

EXAMINER	DATE CONSIDERED
EXAMINER: Initial citation if reference was considered.	Draw line through citation if not in conformance to MPEP 609 and

not considered. Include copy of this form with next communication to applicant.

PTO-1449 (Modified)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

**U.S. PATENT DOCUMENTS** 

U.S. PATENT DUCUMENTS										
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE			
	151.	4,763,249	08/09/88	Bomba et al.						
	152.	5,179,667	01/12/1993	Iyer						
	153.	5,029,124	07/02/1991	Leahy et al.						
	154.	4,878,166	10/31/1989	Johnson et al.						
	155.	4,851,990	07/25/1989	Johnson et al.						
	156.	4,839,801	06/13/1989	Nicely et al.						
	157.	3,950,735	04/13/1976	Patel						
	158.	4,933,953	Jun. 12, 1990	Yagi						
	159.	5,133,064	Jul. 21, 1992	Hotta et al						
	160.	5,184,027	Feb. 2, 1993	Masuda et al.						
	161.	4,761,567	Aug. 2, 1988	Walters, Jr. et al.						
	162.	5,101,117	Mar. 31, 1992	Johnson et al.						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
	163.	SHO 58-192154	Nov. 9, 1983	Japan			NO .
	164.	SHO 63-34795	Feb. 15, 1988	Japan			NO
	165.	SHO 61-107453	May 26, 1986	Japan			NO
	166.	SHO 63-91766	April 22, 1988	Japan			YES
	167.	SHO 62-16289	Jan. 24, 1987	Japan			NO.
	168.	SHO 61-160556	Oct. 4, 1986	Japan			NO
	169.	JP 1284132	Nov 15, 1989	Japan			YES

**EXAMINER** 

**DATE CONSIDERED** 

FEB O 6 2004

PTO-1449 (Modified)

RADEM ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

U.S. PATENT DOCUMENTS

U.S. PATENT DOCUMENTS										
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE			
	170.	4,528,646	Jul. 9, 1985	Ochii et al.						
	171.	4,922,141	May 1, 1990	Lofgren et al.						
	172.	4,253,147	Feb. 24, 1981	MacDougall et al.						
	173.	4,975,877	Dec. 4, 1990	Bell						
	174.	4,712,194	Dec. 8, 1987	Yamaguchi et al.						
	175.	6,345,321	Feb. 5, 2002	Litaize et al.						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO	
	176.	EP 0 329 418 A2	Aug 23, 1989	EPO				
	177.	JP 1043894	Feb. 16, 1989	Japan			YES	
	178.	sho 58-31637A	Feb 24, 1983	Japan				
- 0.0	179.	sho 59-165285A	Mar. 11, 1983	Japan				
	180.	sho 60-261095A	June 6, 1984	Japan				
	181.	sho 63-300310	Dec. 7, 1988	Japan			·	
	182.	hei 2-8950	Jan 12, 1990	Japan				
	183.	sho 58-184626A	Oct 28, 1983	Japan				

**EXAMINER** 

DATE CONSIDERED

FEB 0 6 2004 BUT

PTO-1449 (Modified)

TRADE ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

U.S. PATENT DOCUMENTS

			. PATENT DUCU	VIENIS			
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	184.	5,287,532	Feb. 15, 1994	Hunt			
	185.	5,157,776	Oct. 20, 1992	Foster			
	186.	5,023,838	Jun. 11, 1991	Herbert			
	187.	4,961,171	Oct. 2, 1990	Pinkham et al.			
	188.	4,930,065	May 22, 1990	McLagan et al.			
	189.	4,641,276	Feb. 3, 1987	Dunki-Jacobs			
	190.	4,639,890	Jan. 27, 1987	Heilveil et al.			
	191.	4,468,733	Aug. 28, 1984	Oka et al.			
	192.	4,426,685	Jan. 17, 1984	Lorentzen			
	193.	4,408,272	Oct. 4, 1983	Walters			
·	194.	4,257,097	Mar. 17, 1981	Moran			
	195.	3,846,763	Nov. 5, 1974	Riikonen			
-	196.	Н696	Oct. 3, 1989	Davidson			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

197.	Motorola MC88200 Cache/Memory Management Unit User's Manual, Motorola Inc. 1989
198.	B. Ramakrishna et al., "The Cydra 5 Departmental Supercomputer Design Philosophies, Decisions, and Trade-offs" Computer IEEE, Jan 1989 pp. 12-35
199.	Ralston, E.D. Reilly, "Encyclopedia of Computer Science", Chapman & Hall, 1983, page 1471
200.	S.A. Ward, R.H. Halstead, "Computation Structures", The MIT Press, McGraw-Hill Book
	Company, 1990, pages, 174-175, 93, 250-251, and 258-259

EXAMINER	DATE CONSIDERED

ATTY. DOCKET NO. 57941.000062 SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S) MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE **STATEMENT** BY APPLICANT

FILING DATE November 20, 2003 **GROUP ART UNIT** Unassigned

**U.S. PATENT DOCUMENTS** 

			.S. I A LEIVI D	00011121112			
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	201.	5,847,997	Dec. 8, 1998	Harada et al.			
	202.	5,148,523	Sep. 15, 1992	Harlin et al.			
	203.	5,142,637	Aug. 25, 1992	Harlin et al.			
	204.	5,109,498	Apr. 28, 1992	Kamiya et al.			
	205.	4,954,987	Sep. 4, 1990	Auvinen et al.			
	206.	4,937,734	Jun 26, 1990	Bechtolsheim			

#### FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
207.	61028248	Feb. 7, 1986	Japan			

# OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

208.	Betty Prince, "Semiconductor Memories", Second Edition, John Wiley & Sons, 1991, pages 251, 310, 314, 200-201, 467
 209.	"Intel MCS-4 Micro Computer Set", Intel Corporation, Santa Clara, CA,1972, (pp.1-12)
210.	"MIPS R3010 coprocessor", IEEE Micro June 1988, (pp.54-62)
211.	"Intel MCS-4 Micro Computer Set Users Manual", Intel Corporation, Santa Clara, CA, March 1972, (pp.1-26, and 60-68)
212.	"Bipolar/MOS Memories Data Book", Advanced Micro Devices, Sunnyvale, CA, 1986 (pp. 4-143 to 4-163)
213.	"Memories 1986-87 Databook", Fujitsu Inc., 1986 (pp. 1-102 to 1-128)

EXAMINER	
LAMBILITA	

**DATE CONSIDERED** 

TRADE WATTY. DOCKET NO. 57941.000062 SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

**U.S. PATENT DOCUMENTS** 

			U.S. PATENT DO	COMBITTO			
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	214.	4,920,483	Apr. 24, 1990	Pogue et al.			
	215.	4,912,630	Mar. 27, 1990	Cochcroft Jr.			
-	216.	4,807,189	Feb. 21, 1989	Pinkham et al.			_
	217.	4,799,199	Jan. 17, 1989	Scales, III et al.			
	218.	4,788,667	Nov. 29, 1988	Nakano et al.			
	219.	4,680,738	Jul. 14, 1987	Tam			
	220.	4,675,850	Jun. 23, 1987	Kumanoya et al.			
	221.	4,519,034	May 21, 1985	Smith et al.			
	222.	4,315,308	Feb. 9, 1982	Jackson			
	223.	4,247,817	Jan. 27, 1981	Heller			
	224.	4,092,665	May 30, 1978	Saran			
	225.	4,084,154	Apr. 11, 1978	Panigraphi			
	226.	3,821,715	Jun. 28, 1974	Hoff, Jr. et al.			

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
120553/1987	Jun. 1, 1987	Japan			
0 189 576	Aug. 6, 1986	ЕРО		·	
 0 187 289	Jul. 16, 1986	EPO			
 0 166 192	Jan. 2, 1986	EPO			

**EXAMINER** 

DATE CONSIDERED

PTO-1449 (Modified)

BAD 11TY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)

MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

U.S. PATENT DOCUMENTS

			.b. I III DOO		· · · · · · · · · · · · · · · · · · ·		
EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	227.	5,598,554	Jan. 28, 1997	Litaize et al.			
	228.	4,644,469	Feb. 17, 1987	Sumi			
	229.	4,747,081	May 24, 1988	Heilveil et al.			
	230.	6,112,287	Aug. 29, 2000	Litaize et al.			
	231.	4,782,439	Nov. 1, 1988	Borkar et al.			

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
232.	0 126 976	Dec. 5, 1984	ЕРО			
233.	135684/1984	Aug. 3, 1984	Japan			
234.	82/02615	Aug. 5, 1982	PCT			,
235.	33471/1982	Feb. 23, 1982	Japan			

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

H. J. Mattausch, et al., "A Memory-Based High-Speed Digital Delay Line With a Large Adjustable Length", IEEE Journal of Solid State Circuits, vol. 23, no. 1, Feb. 1988 (pp. 105-110)
"MIPS Chip Set Implements Full ECL CPU" Microprocessor Report, MicroDesign Resources Inc., Vol. 3: No. 12; Dec. 1989
"R6000 System Bus & R6020 SBC Specification" MIPS Computer Systems Inc., Sunnyvale, CA, Aug 22, 1989

EXAMINER	DATE CONSIDERED
EXAMINER: Initial citation if reference was considered.	Draw line through citation if not in conformance to MPEP 609 and not

considered. Include copy of this form with next communication to applicant.

PTO-1449 (Modified)

BADEMA ATTY. DOCKET NO. 57941.000062

SERIAL NUMBER 10/716,595

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

APPLICANT(S)
MICHAEL FARMWALD ET AL.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

FILING DATE November 20, 2003 GROUP ART UNIT Unassigned

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

236.	R.A. Volz et al., "POSITION PAPER ON GLOBAL CLOCK FOR THE FUTUREBUS +", SCI – 1989 – doc-59, pp. 1-9
237.	"ECL bus controller hits 266 Mbytes/s" Microprocessor Report, MicroDesign Resources Inc., Vol. 4: No. 1; Pg. 12, Jan. 24, 1990
238.	S. Muchmore, "Designing Computer Systems Based on Multibus II", New Electronics, Vol. 20,
	No. 16, p. 31-32, Aug. 11, 1987.
239.	"Accordion Start-Stop Sequencer for a Variable Cycle Storage Controller", IBM Technical
	Disclosure Bulletin, pp. 2074-2075, (a delphion.com reprint on two sheets), Oct. 1986.
240.	"Motorola 68030 Cache Organization", posting to Internet Newsgroup net.arch by
	aglew@ccvaxa.UUCP, (a google.com reprint on two sheets), Sep. 29, 1986.
241.	M. Bazes et al., "A Programmable NMOS DRAM Controller for Microcomputer Systems with
	Dual-Port Memory and Error Checking And Correction", IEEE Journal of Solid State Circuits,
	Vol. 18, No. 2, pp. 164-172, Apr. 1983.
242.	R.W. Callahan et al., "Burst-Mode PIO Bus Control", IBM Technical Disclosure Bulletin, Vol.
	21, No. 4, pp. 1417-1419, (a delphion.com reprint on two sheets), Sep. 1978.
243.	Stanley D. Rosenbaum et al., "A 16 384-Bit High-Density CCD Memory", IEEE Journal of Solid
	State Circuits, Vol. SC-11, No. 1, pp. 33-39, Feb. 1976.
244.	Hopper et al., "Multiple vs. Wide Shared Bus Multiprocessors", Proceedings of the 16th Annual
	International Symposium on Computer Architecture, Jerusalem, Israel, June 1989, IEEE Computer
	Society Press, 1989.
245.	Gerninger et al., "A Survey of Commercial Parallel Processors", Computer Architecture News, Vol.
	16, no. 4, Sept. 1988
246.	Dubois et al., "Effects of Cache Coherency in Mulitprocessors", IEEE Transaction in Computers,
	Vol. C31, No. 11, pgs. 1083-1099, November 1982.

EXAMINER	DATE CONSIDERED
EVAMINED. Initial citation if reference was considered	Draw line through citation if not in conformance to MPEP 609 and not

considered. Include copy of this form with next communication to applicant.